

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

The Examiner rejected claims 1-10 under 35 U.S.C. 103(a) as being unpatentable over JP 9-283157. The Examiner's rejection is traversed for the following reason.

In regards to claim 1, Applicant discloses a fuel cell separator 10 that has a metal central part 22, a peripheral part 30 surrounding the metal central part 22 and an elastic member 40 that connects the peripheral part 30 to the metal central part 22. The peripheral part 30 is comprised of a frame part whereby the entire frame part is made from a resin. The frame part defines a reaction gas passage 13, which guides the reaction gases (hydrogen and oxygen) to the metal central part 22. The frame part further defines a reaction product passage 14, which guides a reaction product (H₂O) produced at the metal central part 22 to the reaction product passage 14. As required by claim 1, the reaction gas passage 13 and the reaction product passage 14 (hereinafter referred to collectively as "passages") are defined in the frame part of the separator. Further, paragraphs [0002] through [0013] of the present application disclose that a separator with a metal periphery is prone to corrosion where the reaction gasses (hydrogen and oxygen) and the reaction product (H₂O) pass through the passages. Thus, as disclosed in paragraph [0015] of the present invention, the purpose of a separator with a resin frame part is to prevent the periphery of the separator from

corroding. In addition, as disclosed in paragraph [0018] of the present application, the presence of the elastic member prevents metal deformation of the metal central part and/or fatigue failure of the resin periphery. Because the metal central part and the resin periphery have different thermal expansion coefficients, if the two were directly connected the metal central may deform or the resin may fail due to fatigue from the differential in thermal expansion. The deformation and fatigue failure is prevented by the presence of the elastic member because the elastic member can absorb the difference in thermal expansion between the metal central part and the resin peripheral part.

JP 9-283157 discloses a fuel cell separator 31 that includes a conductive metal plate 32. The separator cited by the Examiner in FIGS. 10 and 11 is a compound separator 41 that includes multiple conductive plates 31a-31i and a resin insulating frame 42. In addition, FIG. 12 discloses a metal mold 51 to form the compound separator 41 whereby the resin flows through the metal mold 51 to secure the plates 31a-31i into place. Accordingly, JP 9-283157 does not teach all the features of claim 1. More specifically, JP 9-283157 does not teach "wherein the frame part is connected to the metal member by an elastic member."

The Examiner expressly stated that JP 9-283157 does not teach an elastic member that connects a central metal member to a frame. The Examiner, however, further stated that the invention as a whole would have been obvious because the use of a two part frame, as opposed by the unitary one disclosed by the reference, would have the effect of creating an "elastic" member connecting the outer frame to the metallic member. Specifically, the Examiner stated, "in Figure 10, the inner portion of frame 42, if formed from a separate piece during manufacturing, would form the claimed "elastic" member." Finally, the Examiner cited MPEP 2144.01 and stated that making separable

a prior art product was held within the skill of the art. Applicant respectfully disagrees with the Examiner for the reasons set forth below.

There must be a basis for modifying a reference. Applicant respectfully submits that the Examiner has not provided any reason, motivation, or suggestion to modify the reference necessary for a prima facie case of obviousness. The Examiner is respectfully reminded that “[t]he teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991).” (See MPEP § 2142). Applicant submits that no motivation is present in JP 9-283157 that would lead one of ordinary skill in the art to modify JP 9-283157 as claimed by the Examiner.

Specifically, referring to FIGS. 10-12 and to paragraphs [0104] through [0107], JP 9-283157 discloses a compound separator 41 that includes multiple conductive plates 31a-31i and a resin insulating frame 42. The plates 31a-31i are independent conductive plates, which are electrically connected. The compound separator 41 is manufactured using a metal mold 51, as shown in FIG. 12. The metal mold 51 includes multiple slots 53, which form an inner portion of the resin insulating frame 42. Specifically, the slots 53 form a compartment for each conductive plate 31a-31i. During a hot press manufacturing process an upper mold is positioned on top of the metal mold 51 and pressurized and heated to 270°C. The resin is then injection molded into the metal mold 51, as disclosed in paragraph [0107]. The resin flows through both the outer portion of the metal mold 51 and through the slots 53. Thus, the resin forms a ridge in the slots 53 thereby insulating the conductive plates 31a-31i from each other. After the resin cools the frame 42

including the slotted portions formed by the slots 53 secures the conductive plates 31a-31i in place.

Referring now to paragraphs [0055] and [0056], paragraphs [0055] and [0056] disclose several advantages to the manufacturing process for the compound separator. Specifically, paragraphs [0055] and [0056] disclose that the configuration of the metal mold 51 secures the conductive plates 31a-31i in a fixed position during the hot press manufacturing method at which time the insulating resin is injected molded into the metal mold 51. The insulating resin, which makes up the frame 42, once cooled secures the conductive plates 31a-31i in a fixed position. Paragraph [0056] concludes that the configuration and arrangement of a current carrying part (conductive plates 31a-31i) are fixed by the metal mold 51 and thus, the compound separator 41 can be manufactured reliably and easily. Thus, JP 9-283157 suggests a fuel cell separator having a resin periphery directly in contact with metal conductive plates whereby the resin can be easily injected molded into the metal frame 51 during the hot press manufacturing method. There is no disclosure in JP 9-283157 that suggests the use of an elastic member to connect the resin periphery with the metal conductive plates. Therefore, there would be no motivation to one skilled in the art to modify JP 9-283157 to include an elastic member.

Finally, in response to the Examiner's citation of MPEP 2144.04, Applicant assumes that the Examiner was referring to MPEP Section 2144.04(V)(C), Making Separable. MPEP Section 2144.04(V)(C) discusses *In re Dulberg* where the claimed structure was a lipstick holder with a removable cap. The lipstick holder was fully met by the prior art except that in the prior art the cap was press fitted and therefore not manually removable. The court held that "if it were considered desirable for any

reason to obtain access to the end of [the prior art's] holder to which the cap is applied, it would be obvious to make the cap removable for that purpose." *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961). Thus, the court held that there must be a reason to obtain access to the end of the holder in order to conclude that it would be obvious to make the cap removable. As explained above, JP 9-283157 discloses that the compound separator can be made easily and reliably by injection molding a resin into a metal frame to secure the metal plates in a fixed position. There is no reason or suggestion in JP 9-283157 to include an elastic member to connect the resin frame to the conductive plates. Thus, it would not be obvious to one skilled in the art to include an elastic member.

Based on the foregoing, it is apparent that JP 9-283157 does not teach all the features of claim 1. Thus, reconsideration and withdrawal of the rejections of claim 1 based upon the JP 9-283157 reference are hereby requested.

Claims 2-5 depend either directly or indirectly on claim 1, thus, all arguments pertaining to claim 1 are equally applicable to these claims and are herein incorporated by reference.

In regards to claim 6, claim 6 contains similar subject matter to claim 1 thus, all arguments pertaining to claim 1 are equally applicable to claim 6 and are herein incorporated by reference.

Claims 7-10 depend either directly or indirectly on claim 6, thus, all arguments pertaining to claim 6 are equally applicable to these claims and are herein incorporated by reference.

The Examiner provisionally rejected claims 1-10 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 7-25

of co-pending Application No. 10/352,958 (2003/0143451). In response to the provisional rejection, Applicant will file a terminal disclaimer if and when necessary.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. SHM-15712.

Respectfully submitted,

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